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AMSAT NEWS SERVICE
ANS-216

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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SB SAT @ AMSAT $ANS-216.01
ANS-216 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 216.01
>From AMSAT HQ SILVER SPRING, MD.
DATE August 4, 2013
To All RADIO AMATEURS
BID: $ANS-216.01

HamTV Transmitter Launched to ISS

On Saturday, August 3 at 1948 UT the Japanese HTV-4 cargo vessel was successfully launched to the International Space Station (ISS). Onboard was the HamTV transmitter and a number of CubeSats carrying amateur radio payloads.

The Japanese space agency JAXA has announced details of four CubeSats on the launch. They will be deployed from the ISS by the JEM Small Satellite Orbital Deployer (J-SSOD) between October 2013 and March 2014.

The four CubeSats are:
• PicoDragon a 1U CubeSat developed by Vietnam National Satellite Center(VNSC), University of Tokyo, IHI aerospace. CW beacon on 437.250 MHz and 1k2 AFSK AX.25 telemetry on 437.365 MHz
• ArduSat-1 and ArduSat-X 1U CubeSats developed by Nanorack, NanoSatisfi. ArduSat-1 437.325 MHz 9k6 MSK CCSDS downlink. ArduSat-X

437.345MHz 9k6 MSK CCSDS downlink.
• TechEdSat-3 a 3U CubeSat developed by NASA Ames Research Center

The company NanoRack has announced it is sending 36 Units of CubeSats to the ISS (believed to be 26 separate CubeSats, some 2U or 3U in size). At the time of writing it is believed they will be going on a later cargo vessel.

The main mission of HamTV is to perform contacts between the astronauts on the ISS and school students, not only by voice, but also by unidirectional video from the ISS to the ground within the ARISS program.

The ESA Columbus module on the ISS will host the 2.4 GHz video transmitting station in addition to the existing 144 MHz FM amateur radio station. This new equipment can broadcast images from the ISS during the school contacts or other pre-recorded video images up to 24 hours a day to allow ground stations tuning.

It is planned to transmit DVB-S signals on 2.4 GHz at either 1.3Msps or 2.3Msps with 10 watts of RF.

The IARU Amateur Satellite Frequency Coordination Panel have announced frequencies of 2422.0 MHz and 2437.0 MHz.

HamVideo is the name of the onboard DATV S-band transmitter. HamTV is the name of the complete system, comprising DATV downlink and VHF voice uplink. Kaiser Italia SRL was the prime-contractor for the design and development of the flight and ground segment http://www.kayser.it/index.php/exploration-2/ham-tv

Read the HamTV overview paper here.

HamTV Link Budget
http://www.amsat.it/Amsat-Italia_HamTV.pdf

HamTV on Facebook
https://www.facebook.com/Hamtvproject

ARISS DATV Antennas Installed on Columbus
http://www.ariss-eu.org/columbus.htm

Spaceflight story – Japan’s HTV-4 launches supplies and science to the ISS http://tinyurl.com/ANS-216-C

[ANS thanks AMSAT-UK for the above information]

AMSAT.ORG Make Over

Thanks to the effort of a bunch of people , especially Brent Salmi, Steve Kenwolf and Brent Salmi, we have pushed a new, more colorful theme to the AMSAT web site, as well as some updated content. We are by no means done, and welcome the assistance of others to generate content and features for the site. We are using the WordPress content management system. so changing content is much simpler than earlier schemes used on www.amsat.org. It's got a nice web based interface that should be familiar to anyone with basic word processing skills. If you see something you think you can improve on, drop Joe Fitzgerald note, jfitzgerald at alum dot wpi dot edu !

[ANS thanks Joe KM1P for the above information]

Have You Received Your 2013 AMSAT-NA Board of Directors Ballot?

Ballots were mailed to members in good standing by July 15th, and must be returned to the AMSAT-NA office no later than the close of business on September 15th, 2013. If you have not received your ballot by August 5th, please contact the AMSAT Office. Ballots sent to members outside North America are automatically sent via air mail. It is suggested that they be returned the same way.

This year there are eight candidates running for the AMSAT-NA Board of Directors. The four candidates receiving the highest number of votes will be seated as voting Board Members with two year terms. The two candidates receiving the next highest number of votes will be non-voting Alternate Board Members with terms of one year. Please vote for no more than four candidates.

AMSAT-NA Board candidates in alphabetical order by last name:

Barry Baines, WD4ASW
Alan Biddle, WA4SCA
Steve Coy, K8UD
Frank Griffin, K4FEG
Mark Hammond, N8MH
Brian Klofas, KF6ZEO
JoAnne Maenpaa, K9JKM
Tony Monteiro, AA2TX

[ANS thanks the AMSAT Office for the above information]

AMSAT Mentions and Articles of Interest in the Press

The August CQ Magazine mentions the Fox-1 Ham Radio CubeSat frequency announcement and the availability of the 2013 Dayton AMSAT Forum on YouTube. In addition to these are articles on EME from Antartica and the ESTCube-1 CubeSate

The August Monitoring Times cover story is "How to Become an ISS APRS Gateway", by Christopher Friesen, VE4CWF. Keith Pugh's, KB1SF/VA3KSF, Amateur Radio Satellites column covers Saudisat 1C (SO-50, ESTCube-1 and Fox-1A.

Note that Grove Enterprises has announced that it will cease publication of Monitoring Times in December of this year.

[ANS thanks ANS Editors for the above information]

Radio Scouting – ARISS Contact Reception Report

The Boy Scout’s of America 2013 Jamboree included many radio activities by the club station K2BSA. The station was on the air on

various frequencies and modes of operation and had a planned contact with astronauts aboard the international space station as part of the Amateur Radio on the International Space Station (ARISS) program. ARISS contacts are important opportunities for students to learn about amateur radio, space exploration, science and technology. They also offer radio hobbyists a unique opportunity to monitor communications from the most impressive human-built structure ever sent into a Low Earth Orbit (LEO). Participating in “Radio Scouting,” the general term used to describe the activities associated with amateur radio and scouting, also affords scouts the opportunity to earn their radio merit badges.

The space station was making a relatively low 30 degree pass to the south of my location. I copied amateur radio station NA1SS’s half of the contact by climbing to the peak of my roof to get as free from the trees and other rooftops as possible and used my Yaesu FT-60R handheld transceiver and my “Slapshot” antenna.
The following is my official reception report:
Date: July 20, 2013
Time: 15:34 to 15:38 UTC
Frequency: 145.800 +/- Doppler shift
Mode: FM
Signal: Full quieting

Comments: I copied NA1SS making contact with K2BSA and begin answering questions. It sounded like Italian astronaut Luca Parmitano, KF5KDP was conducting the QSO. Parmitano answered questions about whether he was a scout, how they clean up after themselves, and the use of robotics in space. I copied two audio clips, the first and clearest clip is 3 minutes long. Fortunately my clip contains the audio with both call signs being used by Parmitano.

See the full article with links to the audio at
http://tinyurl.com/ANS-216-B (Flash player required)

[ANS thanks Christopher VE4CWF for the above information]

Radio Ham’s Leaky Spacesuit

In edition 683 of Jonathan’s Space Report (JSR) Jonathan McDowell provides the history of the spacesuit of radio amateur Luca Parmitano KF5KDP which developed a water leak inside the helmet during a spacewalk on July 9, 2013.

The spacewalk was abandoned and he was assisted back to the International Space Station (ISS) by Chris Cassidy KF5KDR.

The suit Luca Parmitano KF5KDP used for the extravehicular activity (EVA) was EMU 3011. It had three previous station tours, here is its flight history:

Flight 1	STS-79	1996 Sep 16-1996 Sep 25	(Apt, not used)
Flight 2	STS-83	1997 Apr 4-1997 Apr 8	(Spacelab, Gernhardt, not used)
Flight 3	STS-94	1997 Jul 1-1997 Jul 17	(Spacelab, Gernhardt, not used)
Flight 4	STS-91	1998 Jun 2-1998 Jun 12	(Chang, not used)
Flight 5	STS-95	1998 Oct 29-1998 Nov 7	(Robinson, not used)
Flight 6	STS-96	1999 May 27-1999 Jun 6	(Barry, 1 EVA)
Flight 7	STS-101	2000 May 19-2000 May 29	(Horowitz, not used)
Flight 8	STS-106	2000 Sep 8-2000 Sep 20	(Backup, not used)

Flight 9 STS-97   2000 Dec 1-2000 Dec 11 (Tanner, 3 EVA)
Flight 10 STS-100   2001 Apr 19-2001 Jul 25 (ISS tour, Hadfield (2), down on 104)
Flight 11 STS-109   2002 Mar 1-2002 Mar 12 (HST, Massimino(2))
Flight 12 STS-111   2002 Jun 5-2005 Aug 9 (ISS tour, Sellers (3),Pettit(2), down on 114)
Flight 13 STS-126   2008 Nov 15-2009 Nov 27 (ISS tour, down on 129, not used)
Flight 14 STS-132   2010 May 14-present   (ISS tour; Williams (1), Hoshide (2), Parmitano(2))

EMU 3011 incorporates the PLSS 1011 backpack – this contains most of the systems and you can think of it as the core of the suit considered as its own spaceship, with the other components as a relatively inert bubble containing the human occupant. Before the EMU 3000 series nomenclature was adopted, PLSS 1011 flew multiple times:

Flight 1 STS 61-B 1985 Nov 27-1985 Dec 3 EMU 1070/PLSS 1011 (Spring, 1 EVA)
Flight 2 STS-26R   1988 Sep 29-1988 Oct 3 EMU 1090/PLSS 1011 (Lounge, not used)
Flight 3 STS-27R   1988 Dec 2-1988 Dec 6 EMU 1090/PLSS 1011 (Ross, not used)
Flight 4 STS-29R   1989 Mar 13-1989 Mar 18 EMU 1090/PLSS 1011 (Springer, not used)
Flight 5 STS-28R   1989 Aug 8-1989 Aug 13 EMU 1098/PLSS 1011 (Brown, not used)
Flight 6 STS-36   1990 Feb 28-1990 Mar 4 EMU 2008/PLSS 1011 (Thout, not used)
Flight 7 STS-41   1990 Oct 6-1990 Oct 10 EMU 2008/PLSS 1011 (Akers, not used)
Flight 8 STS-39   1991 Apr 28-1991 May 6 EMU 2008/PLSS 1011 (Harbaugh, not used)
Flight 9 STS-48   1991 Sep 12-1991 Sep 18 EMU 2008/PLSS 1011 (Buchli, not used)
Flight 10 STS-46   1992 Jul 31-1992 Aug 8 EMU 2021/PLSS 1011 (Chang, not used)
Flight 11 STS-73   1995 Oct 20-1995 Nov 5 EMU 2034/PLSS 1011 (Coleman, not used)

So, this PLSS has flown a total of 25 times in space over 28 years – although of course there’s a bit of a “grandfather’s axe” paradox involved as it’s not clear how many of the original components remain.

The article includes a video of NASA astronaut Chris Cassidy KF5KDR showing where the water leaked. See the full story with video at http://tinyurl.com/mp3h2dm

Jonathan’s Space Report (JSR)
http://www.planet4589.org/jsr.html

NASA press release
http://www.nasa.gov/content/tuesday-spacewalk-ended-early/

[ANS thanks Southgate ARN for the above information]

Curiosity First Anniversary Event

NASA officials and crew members aboard the International Space

Station will observe the first anniversary of the Curiosity rover's landing on Mars at a public event in Washington from noon-1:30 p.m. EDT Tuesday, August 6.

The event will be broadcast on NASA Television and streamed live on the agency's website.

Media and the public are welcome to attend to hear highlights from the Mars Science Laboratory's first year of investigations, learn about upcoming NASA robotic missions to the red planet, and speak with astronauts conducting experiments in space that will enable human exploration of Mars in the 2030s.

Those interested in attending should plan to arrive at NASA Headquarters, 300 E St. SW, by 11:30 a.m. Seating is limited.

Participating will be:
• Charles Bolden, NASA administrator
• Chris Cassidy, KF5KDR and Karen Nyberg, NASA astronauts, live from the space station
• Jim Green, director, Planetary Division, NASA's Science Mission Directorate
• Sam Scimemi, director, NASA's International Space Station Program
• Prasun Desai, acting director, Strategic Integration, NASA's Space Technology Mission Directorate

The Mars Science Laboratory mission successfully placed the one-ton Curiosity rover on the surface of Mars on Aug. 6, 2012, UTC and EDT (evening of Aug. 5, 2012, PDT), about 1 mile from the center of its 12-mile-long target area.

Within the first eight months of a planned 23-months primary mission, Curiosity met its major science objective of finding evidence of a past environment well-suited to support microbial life. With much more science to come, Curiosity's wheels continue to blaze a trail for human footprints on Mars.

To follow the conversation online about Curiosity's first year on Mars, use hashtag #1YearOnMars or follow @NASA and @MarsCuriosity on Twitter.

For NASA TV streaming video, schedule and downlink information, visit:
http://www.nasa.gov/ntv

For more information about NASA's exploration of Mars, visit:
http://www.nasa.gov/mars

For more information about the International Space Station, visit:
http://www.nasa.gov/station

[ANS thanks Southgate ARN for the above information]

ARISS News

+ A Successful contact was made between Italian Bilingual School, Leichhardt (Sydney), New South Wales, Australia and Astronaut Luca Parmitano, KF5KDP using callsign NA1SS. The contact began 2013-07-30 08:26 UTC and lasted about nine and a half minutes. Contact was telebridged via VK4KHZ. IN3GHZ served as the ARISS Mentor.

The Italian Bilingual School in New South Wales Australia offers your child a unique educational opportunity to achieve excellence through bilingualism. The study of Italian offers students a window into a culture of beauty, a vehicle for creative individuality and an appreciation of the musicality in language. Italian is, after English, the most widely spoken language in Australia. Over half a million Italian Australians use the language every day.

The study of Italian prepares our students for the challenges of a multicultural global community by deepening their understanding of cultural diversity.

+ A Successful contact was made between Oshkosh Air Venture Air Show, Oshkosh, Wisconsin, USA and Astronaut Luca Parmitano, KF5KDP using callsign NA1SS. The contact began 2013-08-01 17:01 UTC and lasted about nine and a half minutes. Contact was telebridged via AH6NM. KA3HDO served as the ARISS Mentor.

With 500,000 visitors to EAA's AirVenture each year and a student membership of more than 20,000, the Experimental Aircraft Association (EAA) is a gateway to aerospace for many young people. The young people present for the contact with the space station were very diverse and reflect the range of people who are active in our organization. This includes a large group of 125 young women and their mentors as part of WomenSoar, where young women can find amazing opportunities with aerospace. Attending, also, were groups from aviation high schools from Florida and California whom participated in the ham radio contact with the ISS crew.   And finally there were additional attendees of all ages who listened and participated with great interest. The EAA believes that inspiring the next generation is work worth doing. We believe in working to grow interest by sharing compelling, real life stories of people who have found rewarding careers and lifestyles through Aerospace. We hope to grow participation in aviation and space and all of its related areas through this once in a lifetime opportunity to talk with astronauts in space and the folks we will have with us on the ground. The ARISS contact an amazing way to help these outstanding students reach that goal.

+ A Successful contact was made between Space Jam 7 at the Octave Chanute Aerospace Museum, Rantoul, IL, USA and Astronaut Christopher J. Cassidy, KF5KDR using callsign NA1SS. The contact began 2013-08-03 20:46 UTC and lasted about nine and a half minutes. Contact was telebridged via LU8YY. AJ9N served as the ARISS Mentor.

We live in a fast-paced world impacted by evolving technology. Space Jam 7 was developed to catch up with the interests and needs of our youth involved in scouting. While scouting will always address camping and pioneer skills, Our objective at the event was to teach STEM technology merit badges and skills required by tomorrow's pioneers, the astronauts. Three of our 44 major activities involved robotics. In addition to 2 Space Exploration classes we taught the Aviation merit badge (including actual flights), introduction to Scuba, Metal Work, Geology, Inventing, Electronics and Electricity. For the first time we offered Cinematography merit badge and a class where Scouts and adults could earn their ham radio license.

We were attended by 2000 Boy Scouts, Girl Scouts and leaders from 20 different states, who flew, drove and took the train from across the country. 350+ volunteers put this together because they love what they do. Of course our signature merit badge was again the Duck Tape merit badge that we do just for fun.

Our theme this year was the Future of Space Exploration and our answer to that implied question is not so much about going to the planet Mars but the education of these youth who will get us there and who asked questions of the astronauts aboard the International Space Station.

Upcoming Contacts

Epet Nº 2, Gral. Pico, Argentina, telebridge via LU8YY
Contact is a go for: Tue 2013-08-06 11:48:35 UTC

Ecole Primaire Pasteur, Fleurance, France, telebridge via LU1CGB
Contact is a go for: Wed 2013-08-07 11:01:18 UTC

ARISS is requesting listener reports for the above contacts. Due to issues with the Kenwood radio that are not fully understood at present,the Ericsson radio is going to be used for these contacts. ARISS thanks everyone in advance for their assistance.

US Hams, don't forget that there is a new process for US school proposals. For US schools to have an ARISS contact, they must fill out a proposal, submit it to NASA, and see if they are approved or not. Once a school is approved and put on the list, an ARISS mentor will be assigned to assist the school.

NASA will have two open windows a year for schools to submit a proposal. You must go through NASA to get the proposal material. Contact Teaching From Space, a NASA Education office, at JSC-TFS-ARISS at mail dot nasa dot gov or by calling them at (281) 244-2320.

The following US states and entities have never had an ARISS contact: Arkansas, Delaware, Kansas, North Dakota, Rhode Island, South Dakota, Vermont, Wyoming, American Samoa, Guam, Northern Marianas Islands, and the Virgin Islands.

Here you will find a listing of all scheduled school contacts, and questions, other ISS related websites, IRLP and Echolink websites, and instructions for any contact that may be streamed live.
http://www.amsat.org/amsat/ariss/news/arissnews.rtf

A complete year by year breakdown of the contacts may be found in the file.
http://www.amsat.org/amsat/ariss/news/arissnews.rtf

[ANS thanks ARISS, Charlie AJ9N and Dave AA4KN for the above information]

Satellite Shorts From All Over

+ 432 and Above EME Newsletter is now online
http://www.nitehawk.com/rasmit/em70cm.html

+ Frank Griffin, K4FEG, reported to the AMSAT-BB, "it is my opinion that we are quickly approaching the end of the Eclipse Cycle for AO7 this season.

In May of 2014 I hope to look at the beginning of the Eclipse Cycle and work at predicting the beginning and end of it better.

This has been a fun exercise for me and I appreciate those from around the world that forwarded their observations to me.

Now it is time to sit and wait to see if the switches start back on August 2, 2013 at @21:00 UTC"

+ In a follow-up post Paul Stoetzer, N8HM, adds "The "AMSAT-OSCAR 7 Technical Operator's Plan And Experimenter's Guide" found starting on page 75 of this PDF, http://ka9q.net/AMSAT-Newsletter-1974.pdf says that the clock automatically switches the satellite to Mode B at 0000 GMT. If the clock is reset by eclipse to 0000, it stands to reason that it would always come up in Mode B out of eclipse."

Paul later reported Interestingly, it looks like it's still in Mode B based on status reports, and hasn't switched to Mode A at all despite being in full illumination for more than 48 hours at this point.

Even though it's not fully eclipsed at any point in it's orbit now, maybe it's still not receiving enough sunlight to remain powered up at some point during it's orbit?

Telemetry reports would be very interesting to see what the onboard clock is reading.

+ AMSAT-NA has several presences on Social Media. AMSAT-NA join us on FACEBOOK, Twitter, Google+ and YouTube

+ Note that the Editors of ANS appreciate any and all information and stories relative to our membership. If you see a mention of AMSAT in the news, are planning a demonstration or deliverying a speech, let us know. Send your stories, announcements and reports to ans-editor(a)amsat.org.

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive addi-tional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the stu-dent rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
EMike McCardel, KC8YLD
kc8yld at amsat dot org